

THE MINERAL INDUSTRY OF THE NETHERLANDS

By Harold R. Newman

The Netherlands was an important regional producer of natural gas and petroleum for the European market and played a major role as a transshipment center for mineral materials that entered and left continental Europe. In terms of world production, however, it was a modest producer of metallic and nonmetallic minerals and mineral products.

The Netherlands has a land area of 33,883 square kilometers and borders the North Sea to the north and west, Belgium to the south, and Germany to the east. The country was one of the most densely populated and topographically low-lying countries in the world. In 2004, the gross domestic product (GDP) at purchasing power parity was \$477 billion, and per capita income was \$29,253. The growth rate was 1.25% (International Monetary Fund, 2005¹).

In 2004, the Dutch economy appeared to be coming out of recession although the recovery was fragile and unsteady. Production remained about the same; output was lower in construction and practically every branch of industry and commercial services. Unemployment rose to 4.6% in 2004 from 4.2% in 2003, and the number of jobs declined for the first time since 1994. The growth in the GDP increased slightly because of the increase in domestic demand and a 7.2% increase in exports. Imports rose by 6.7%. The Dutch economy was heavily dependent on international developments and could benefit from a strong revival of the world economy. The export, reexport, and import of goods and services together account for more than 60% of the GDP (Holland Trade, 2004b[§]).

The raw materials sector was dominated by natural gas and petroleum production, of which about 40% was from offshore. Mining was confined to the extraction of limestone, peat, and sand and gravel by quarrying and salt by solution mining. In 2004, production of mineral commodities generally remained the same or decreased. Downstream activities included metallurgical and chemical industries, which were largely based on imported ores and industrial minerals (table 1).

Staatstoezicht op de Minnen (State Supervision of Mines) [SodM] ensured that the production of minerals in the Netherlands and the Netherlands portion of the continental shelf was carried out in a responsible and socially acceptable manner. SodM is an agency in the Ministerie van Economische Zaken (Ministry of Economic Affairs). On January 1, 2004, the mining legislation (Mijnbouwwetgeving) which consisted of the Mining Act, the Mining Decree, and the Mining Regulation and replaced previous directives and special rules, was put into force (Staatstoezicht op de Minnen, 2004[§]).

Since the 1980s, the Government has reduced its role in the economy, and privatization has continued with little debate or opposition. Nevertheless, the Government continued to dominate the energy sector and played a large role in the aviation, chemicals, telecommunications, and transportation sectors. The structure of the mineral industry is listed in table 2.

Ispat International N.V. announced it was merging with LNM Holdings N.V. and International Steel Group to create a new steelmaking company Mittal Steel Company N.V. Mittal Steel would be the leading steel producer in the world with a global capacity of 70 million metric tons per year (Mt/yr) and annual sales of \$30 billion. Mittal would be based in the Netherlands. LNM Holdings was one of the world's leading and most profitable steel companies and had substantial mining assets (Indo-Asian News Service, 2004[§]).

Ziniflex Ltd.'s zinc smelter at Budel produced 228,100 metric tons (t) in 2004 compared with 222,700 t in 2003. A feasibility study was underway to expand capacity to 260,000 metric tons per year (t/yr). If the work is approved, then the smelter could reach that capacity by March 2006 (Mining Journal 2005).

Omya Beheer BV (a subsidiary of Omya AG of the Netherlands) was building a ground calcium carbonate (GCC) plant in Moerdijk, which is located near Rotterdam. The company planned to start production by yearend 2005 with an initial capacity of 500,000 t/yr of GCC. The new facility would process white high-purity marble from Omya's Turkish mining operations (Industrial Minerals, 2004b).

Nedmag Industries Mining & Manufacturing BV produced magnesite by a somewhat unusual operation. Nedmag sourced its magnesite by solution mining magnesium chloride deposits of bischofite and carnallite 2 kilometers below the surface in the Zechstein basin. This deposit yields about 500,000 t/yr of raw magnesium-rich salts. The deposit was discovered by the Royal Dutch/Shell Group in 1997 while they were doing exploratory drilling for natural gas. Nedmag produced a suite of products that included calcium chloride, caustic calcined magnesite, dead burned magnesite, magnesium chloride, and magnesium hydroxide (Industrial Minerals, 2004a).

When it came to the supply of energy, the Netherlands was active on the international scene in more than one respect. The country supplied energy to Europe, served as the entrepôt for oil products for the whole of northwestern Europe, and was an advocate for sustainable energy. Onshore natural gas reserves and offshore petroleum and gas reserves in the North Sea have allowed the Netherlands to make a significant contribution to the European energy supply. Its main customers were Belgium, France, Germany, Italy, and Switzerland (Holland Trade, 2004a[§]).

As of 2003, proven natural gas reserves were more than 1.9 trillion cubic meters, or about 1% of the world total. The Netherlands was the third leading natural gas producer in the European Union (EU) and the ninth leading in the world; the country accounted for more than 30% of total EU annual natural gas production and about 2.8% of the annual world total. It was also the world's fifth leading natural gas exporter (Carbon Sequestration Leadership Forum, 2004[§]).

BP plc announced that it had begun construction of a 9-megawatt (MW) wind farm at its oil terminal in the Port of Amsterdam. The project, which was expected to be completed in mid-2005, will have the capacity to provide electricity for about 5,000 Dutch homes

¹References that include a section mark (§) are found in the Internet References Cited section.

and to displace 5,000 t of carbon dioxide. The project will consist of three wind turbines, each of which will be capable of producing 3 MW of electricity, and was the largest to be ordered for the Dutch market. The electricity will be sold into the Dutch electricity grid (BP Global, 2005§).

Rotterdam, which was the world's leading container port and a major European transportation hub, remained extremely important as a shipping and storage center. In 2004, 352 million metric tons (Mt) of cargo was handled in the Port of Rotterdam; this was an increase of 7% compared with that of 2003. The increase was attributed to petroleum products (21%), handling of ores and scrap (6%), and handling of coal (3%) and crude oil (2%). More than two-thirds of the 29-Mt increase came from crude oil and petroleum products (Port of Rotterdam, 2004§).

Outlook

The Port of Rotterdam will continue to be the leading European port and to play a very important role in the European import and export market. Almost as much cargo will pass through Rotterdam as the numbers two, three, and four ports in Europe—Antwerp, Hamburg, and Marseille—combined. A significant percentage of the cargo coming into the port was processed in the port. The Netherlands is an important exporter of natural gas in the region and is expected to remain so.

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Major Sources of Information

Ministry of Economic Affairs
Energy Production Directorate
Bezuideenhoutseweg 6
2594 EC Hague
The Netherlands

National Geological Survey of the Netherlands
Princetonlaan 6
3508 TA Utrecht
The Netherlands

State Supervision of Mines
Prinses Beatrixlaan 428
2273 XZ Voorburg
The Netherlands

TABLE 1
NETHERLANDS: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Commodity ²	2000	2001	2002	2003	2004 ^c
METALS					
Aluminum, metal:					
Primary	301,700	294,100	284,000 ^r	277,900	326,300 ³
Secondary	119,000	120,000 ^e	120,000 ^e	50,000 ^r	50,000
Cadmium, metal, primary	628	455	485	495 ^r	572 ³
Iron and steel:					
Ore, sintered, from imported ore ^e	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000
Metal, pig iron, including blast-furnace ferroalloys (if any)	4,969,000	5,305,000	5,000,000 ^e	5,000,000	5,000,000
Steel:					
Crude	5,667,000	6,037,000	6,117,000 ^r	6,587,000 ^r	6,848,000 ³
Semimanufactures	4,956,000	5,335,000	5,300,000 ^e	5,300,000 ^e	5,400,000
Lead, metal, refined, secondary	22,200	24,400	22,000 ^e	22,000 ^e	22,000
Zinc, metal, primary	216,800	204,800	203,400	222,700 ^r	228,100 ³
INDUSTRIAL MINERALS					
Cement, hydraulic ^e thousand metric tons	3,450 ³	3,400	3,400	3,400	3,400
Magnesium compounds: ^e					
Chloride	25,000	25,000	25,000	25,000	25,000
Oxide	10,000	10,000	10,000	10,000	10,000
Nitrogen, N content of ammonia thousand metric tons	2,543	1,989	2,053	1,750 ^e	1,970
Salt, all types ^e do.	5,000	5,000	5,000	5,000	5,000
Sand, industrial ^e do.	15	15	15	15	15
Sodium compounds, n.e.s.: ^e					
Carbonate, synthetic	350,000	350,000	350,000	350,000	350,000
Sulfate:					
Natural	20,000	20,000	20,000	20,000	20,000
Synthetic	15,000	15,000	15,000	15,000	15,000
Sulfur:					
Elemental byproduct:					
Of metallurgy	123,000	126,000	124,000 ^r	131,000 ^r	137,000 ³
Of petroleum and natural gas	428,000	384,000	373,000 ^r	408,000 ^r	410,000 ³
Total	551,000	510,000	497,000 ^r	539,000 ^r	547,000 ³
Sulfuric acid, anhydrous, H ₂ SO ₄ ^e	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
MINERAL FUELS AND RELATED MATERIALS					
Coke, metallurgical ^e	2,300,000	2,300,000	2,300,000	2,300,000	2,200,000
Gas:					
Natural:					
Gross million cubic meters	69,180	74,232	75,000 ^e	75,000 ^e	75,000
Marketed do.	68,157	73,296	74,000 ^e	74,000 ^e	74,000
Natural gas liquids ^e thousand 42-gallon barrels	170,000	160,000	160,000	160,000	160,000
Petroleum:					
Crude do.	17,633	16,490 ^r	16,790 ^r	17,000 ^r	17,000
Refinery products: ^e					
Liquefied petroleum gas do.	42,711 ³	42,000	42,000	42,000	42,000
Mineral jelly and wax do.	896 ³	900	900	900	900
Gasoline, motor do.	121,669 ³	120,000	120,000	120,000	120,000
Naphtha and white spirit do.	96,076 ³	90,000	90,000	90,000	90,000
Kerosene and jet fuel do.	59,888 ³	60,000	60,000	60,000	60,000
Refinery gas do.	10,486 ³	11,000	11,000	11,000	11,000
Diesel oil do.	164,060 ³	160,000	160,000	160,000	160,000
Residual fuel oil do.	72,900 ³	81,000	80,000	80,000	80,000
Bitumen do.	4,130 ³	4,200	4,200	4,200	4,200
Unspecified do.	41,349 ³	40,000	40,000	40,000	40,000
Total do.	614,165 ³	609,000	608,000	608,000	608,000

^cEstimated; estimated data are rounded to no more than three significant digits; may not add to total shown.

¹Table includes data available through May 2005.

²In addition to the commodities listed, the Netherlands produced limestone, peat, and construction materials such as sand and gravel, but output was not reported and no basis exists to make reliable estimates of production.

³Reported figure.

TABLE 2
NETHERLANDS: STRUCTURE OF THE MINERAL INDUSTRY IN 2004

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies	Location of main facility	Annual capacity
Aluminum:				
Primary		Pechiney Nederland NV	Smelter at Vlissingen	175
Do.		Corus Group	Smelter at Delfzijl	100
Secondary		Alumax Recycling BV	Smelter at Kerkade	50
Cadmium	metric tons	Budelco BV (Australian Overseas Smelting Pty. Ltd, 50%, and Kempensche Zinkmaatschappij Zincs de la Campine BV, 50%)	Plant at Budel-Dorplein	650
Cement		Eerste Nederlandse Cement Industrie NV	Ten plants at Maastricht	2,700
Do.		Cementfabriek IJmuiden BV	Three plants at IJmuiden	1,600
Do.		Cementfabriek Rozenburg BV	Two plants at Rozenburg	920
Lead		Hollandse Metallurgische Industrie Billiton BV	Electrolytic plant at Arnhem	35
Do.		Billiton Witmetaal BV	Electrolytic plant at Naarden	6
Limestone		Ankerpoort NV (Lhoist SA, 100%)	Mines at Maastricht and Winterswijk	600
Magnesia		Nedmag Industries Mining & Manufacturing BV	Plant at Veendam	130
Do.		MAF Magnesite BV	Plant at Schiedam	40
Natural gas	million cubic meters per day	Nederlandse Aardolie Maatschappij BV (NAM) (Shell BV, 50%, and Exxon Mobile BV, 50%)	Groningen, Leeuwarden, Assen, and other onshore gasfields and several offshore wells in the North Sea	225
Petroleum:				
Crude	42-gallon barrels per day	Amoco Inc., Conoco Inc., and Unocal Inc.	766 wells (204 producing) including North Sea fields: Haven, Helder, Helm, Hoorn, Kotter, Logger, and Rijn	83,500
Do.	do.	Nederlandse Aardolie Maatschappij BV (NAM) (Shell BV, 50%, and Exxon Mobile BV, 50%)	Onshore fields: Berkel, DeLier, IJselmonde, Meerkapelle, Pernis, West, Pinacke, Rotterdam, Schoonebeck, Werkendam, and Zoetemeer	20,500
Do.	do.	Veba Oil and Gas Netherlands	Hanze field, North Sea	31,500
Refined		Six companies, of which the major ones are:	Refineries	1,230,500
			Of which:	
		Netherlands Refining Co.	Rotterdam	(446,000)
		Shell Nederland Raffinaderij BV	Pernis	(374,000)
		Esso Nederland BV	Rotterdam	(175,000)
		Total Raffinaderij Nederland NV	Vlissingen	(150,000)
Salt		Akzo Nobel Salt BV (Akzo Nobel BV, 100%)	Mines	4,100
			Of which:	
			Hengelo	(2,100)
			Delfzijl	(2,000)
Sand, silica		Lieben Minerals BV	Mines at South Limburg	150
Sodium:				
Carbonate, synthetic		Brunner Mond Group	Plant at Delfzijl	380
Sulfate, synthetic		do.	do.	600
Steel		Corus Group	Plant at IJmuiden	6,100
Zinc		Budel Zinc BV (Ziniflex Ltd.)	Plant at Budel-Dorplein	250